# DIRECTIONAL ANTENNA INFORMATION

i. Width of beam in degrees at the half power point: 7.7 degrees.

ii. Orientation of the beams relative to the vertical axis: 14.1 degrees.

iii. Orientation of the beams relative to the horizontal plane: Six beams evenly spaced in azimuth.

The antenna subsystem is an electronically steered phased array of Yagi-Uda antennas. The design of the phased array includes tapering for sidelobe reduction that is maximized at near-horizontal elevation angles to meet the criteria in RSEC-E. The antenna beam is pointed near zenith with electronically switched delays introduced to point it 14.1 degrees off vertical in planes that are 60 degrees from each other in azimuth. The antenna beam has a gain of 26.5 dBi. Normal operation will consist of sequential transmissions in each of six directions.